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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,488	09/26/2003	Thomas J. Smith	60680-1792	8253

10291 7590 01/10/2005

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BLOOMFIELD HILLS, MI 48304-0610

EXAMINER

PATEL, VISHAL A

ART UNIT	PAPER NUMBER
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3676

DATE MAILED: 01/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/672,488

Applicant(s)

SMITH, THOMAS J.

Examiner

Vishal Patel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 and 16-20 is/are pending in the application.
- 4a) Of the above claim(s) 10,11 and 22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9,12-14 and 16-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-9 and 12-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Umezawa in view of Benson et al (US. 5,829,240).

Regarding claims 1, 6-9 and 15: Umezawa discloses the invention substantially as claimed above but fails to disclose that the first coating is a nodular thin dense chromium. Benson discloses a sliding surface having a nodular thin dense chromium coating produced by Armoloy process (column 4, lines 50-60). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the chromium of Umezawa to be nodular thin dense chromium coating produced by Armoloy process as taught by Benson to provide a strong and durable coating (column 2, lines 55 to column 3, line 21 and particularly line 5-6 of column 3).

Regarding claim 3-5 and 16-18: Umezawa discloses the claimed invention except that the first coating has hardness of at least 70 on the Rockwell "C" hardness scale, thickness to be between 0.002 to 0.003, withstands temperatures of about -400 to about 1600 degrees F and has a static coefficient of friction of about 0.12. Discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Without the showing of some unexpected result. Since applicant has not shown

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some unexpected result the inclusion of this limitation is considered to be a matter of choice in design. It would have been obvious to one having ordinary skill in the art at the time the invention was made to produce the first coating with hardness of at least 70 on the Rockwell "C" hardness scale, thickness to be between 0.002 to 0.003, withstands temperatures of about -400 to about 1600 degrees F and with a static coefficient of friction of about 0.12 as a matter of design choice.

Furthermore evidence is produced by applicant that Armoloy process will produce the following: hardness of 70 on the Rockwell "C" (page 4 paragraph 17), a static coefficient (see page 5, paragraph 20), thickness to be 0.0002 to 0.0003 (see page 4 paragraph 15) and withstand temperatures of -400 to 1600 degrees F (page 5, paragraph 19).

### ***Response to Arguments***

3. Applicant's arguments filed 10/25/04 have been fully considered but they are not persuasive.
4. In response to applicant's argument that Benson is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the reference is not in the field of endeavor (piston rings) but the reference is in the field of coatings and has motivation that coating provided by Benson would be a strong and more durable coating (column 2, lines 55 to column 3, line 21 and particularly line 5-6 of column 3 of Benson).

***Conclusion***

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vishal Patel whose telephone number is (703) 308-8495. The examiner can normally be reached on Monday through Friday from 7:30 PM to 4:00 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather Shackelford, can be reached on (703) 308-2978.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-2168. Technology Center 3600 Customer Service is available at 703-308-1113. General Customer Service numbers are at 800-786-9199 or 703-308-9000. Fax Customer Service is available at 703-872-9325.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:** 703-872-9326, for formal communications for entry before Final action: or,  
703-872-9327, for formal communications for entry after Final action.

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Hand-delivered responses should be brought to Crystal Park Five, 2451 Crystal Drive, Arlington, Virginia, Seventh Floor (Receptionist suite adjacent to the elevator lobby).

VP

January 3, 2005

A handwritten signature in black ink, appearing to read 'Alison Pickard', with a stylized flourish at the end.

ALISON PICKARD  
Primary Patent Examiner  
Tech. Center 3600